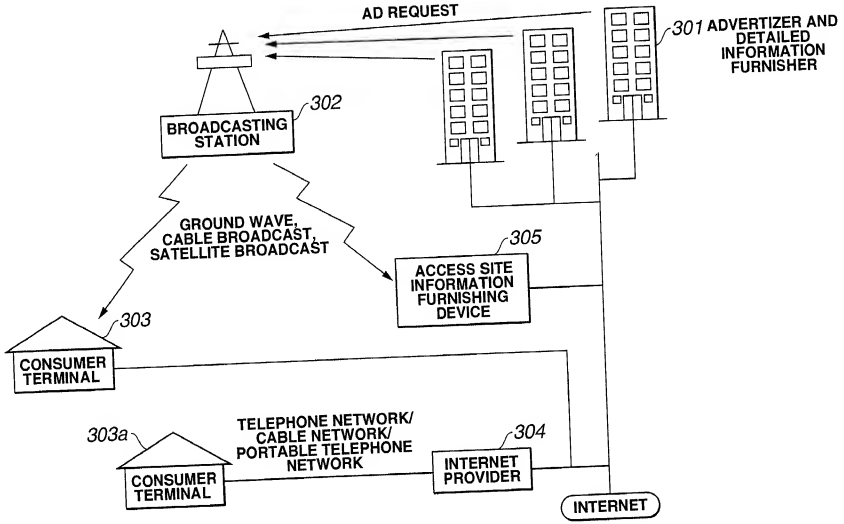


FIG.1

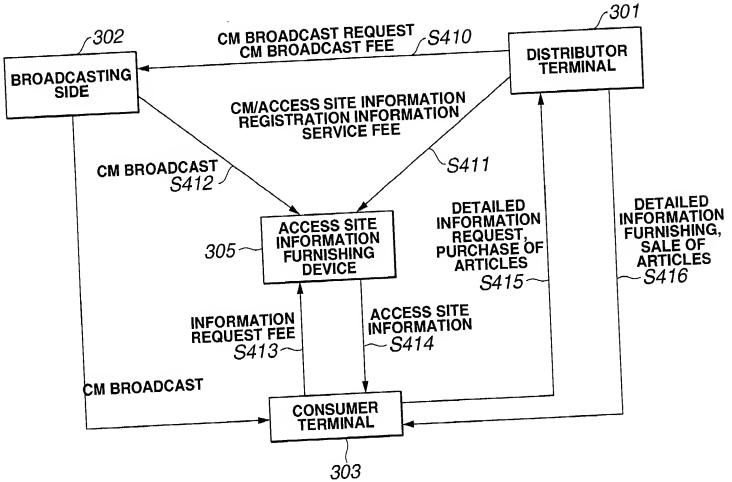

301
302
CM BROADCAST REQUEST
CM BROADCAST FEE
S410
BROADCASTING SIDE
DISTRIBUTOR TERMINAL
CM/ACCESS SITE INFORMATION REGISTRATION INFORMATION SERVICE FEE
S411
CM BROADCAST
S412
ACCESS SITE INFORMATION FURNISHING DEVICE
305
DETAILED INFORMATION REQUEST, PURCHASE OF ARTICLES
S415
DETAILED INFORMATION FURNISHING, SALE OF ARTICLES
S416
INFORMATION REQUEST FEE
S413
ACCESS SITE INFORMATION
S414
CM BROADCAST
CONSUMER TERMINAL
303

FIG.2

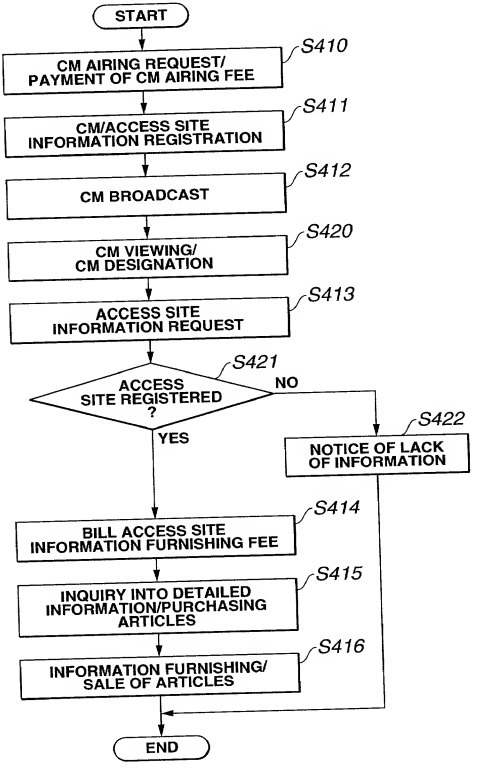

START
CM AIRING REQUEST/ PAYMENT OF CM AIRING FEE
S410
CM/ACCESS SITE INFORMATION REGISTRATION
S411
CM BROADCAST
S412
CM VIEWING/ CM DESIGNATION
S420
ACCESS SITE INFORMATION REQUEST
S413
ACCESS SITE REGISTERED ?
S421
NO
YES
NOTICE OF LACK OF INFORMATION
S422
BILL ACCESS SITE INFORMATION FURNISHING FEE
S414
INQUIRY INTO DETAILED INFORMATION/PURCHASING ARTICLES
S415
INFORMATION FURNISHING/ SALE OF ARTICLES
S416
END

FIG.3

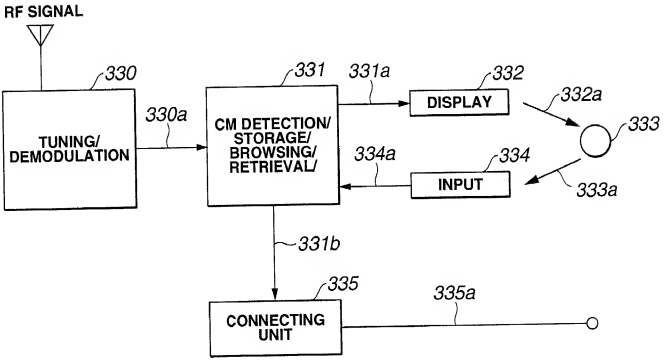


FIG.4

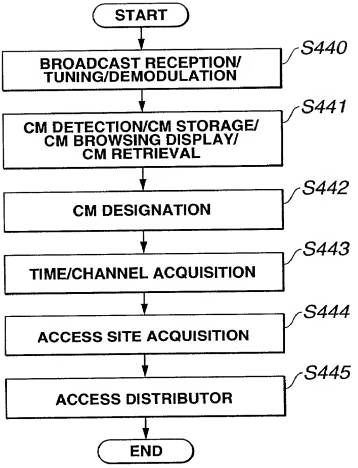

START
BROADCAST RECEPTION/ TUNING/DEMODULATION
S440
CM DETECTION/CM STORAGE/ CM BROWSING DISPLAY/ CM RETRIEVAL
S441
CM DESIGNATION
S442
TIME/CHANNEL ACQUISITION
S443
ACCESS SITE ACQUISITION
S444
ACCESS DISTRIBUTOR
S445
END

FIG.5

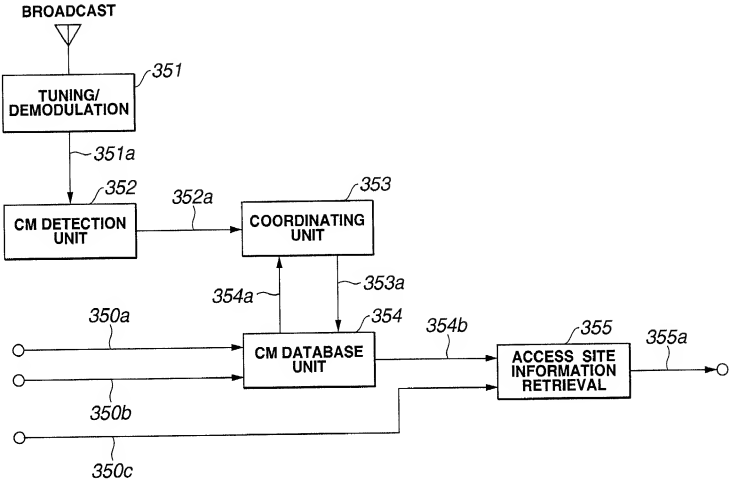


FIG.6

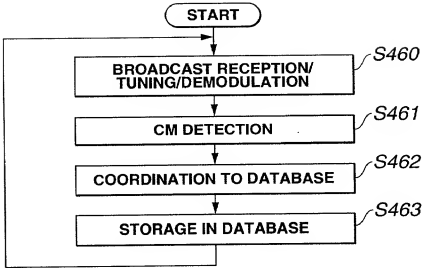

START
BROADCAST RECEPTION/ TUNING/DEMODULATION
S460
CM DETECTION
S461
COORDINATION TO DATABASE
S462
STORAGE IN DATABASE
S463

FIG.7

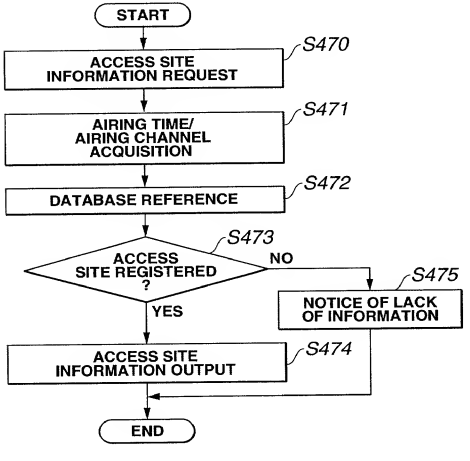

START
ACCESS SITE INFORMATION REQUEST
S470
AIRING TIME/ AIRING CHANNEL ACQUISITION
S471
DATABASE REFERENCE
S472
ACCESS SITE REGISTERED ?
S473
NO
YES
NOTICE OF LACK OF INFORMATION
S475
ACCESS SITE INFORMATION OUTPUT
S474
END

FIG.8

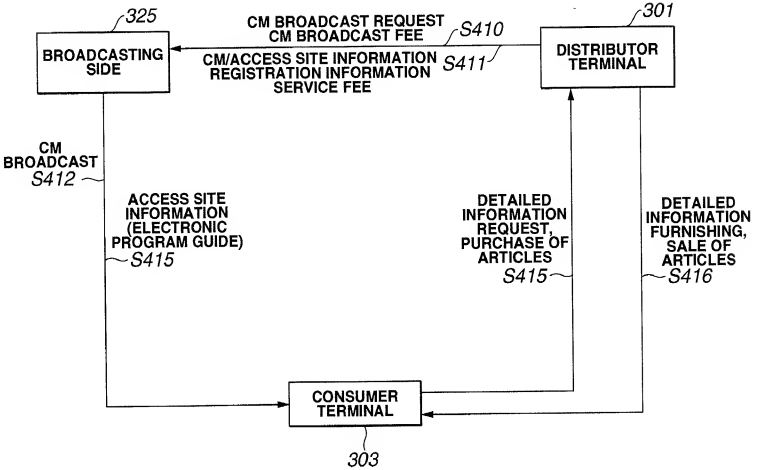


FIG.9

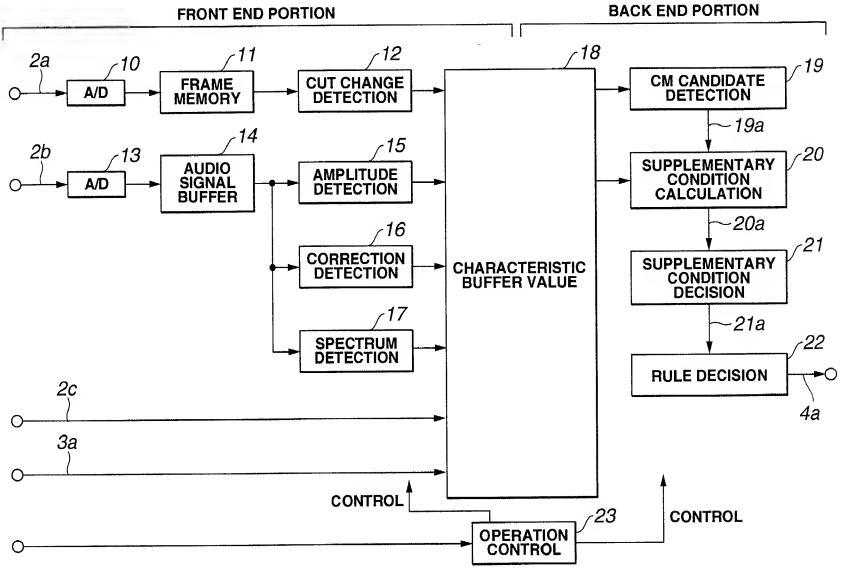


FIG.10

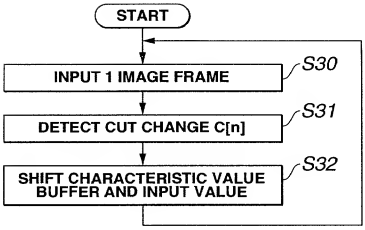

START
INPUT 1 IMAGE FRAME
S30
DETECT CUT CHANGE C[n]
S31
SHIFT CHARACTERISTIC VALUE BUFFER AND INPUT VALUE
S32

FIG.11

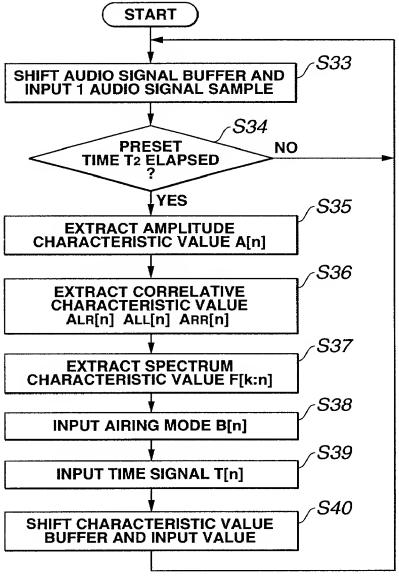

START
SHIFT AUDIO SIGNAL BUFFER AND INPUT 1 AUDIO SIGNAL SAMPLE
S33
PRESET TIME T2 ELAPSED ?
S34
NO
YES
EXTRACT AMPLITUDE CHARACTERISTIC VALUE A[n]
S35
EXTRACT CORRELATIVE CHARACTERISTIC VALUE ALR[n] ALL[n] ARR[n]
S36
EXTRACT SPECTRUM CHARACTERISTIC VALUE F[k:n]
S37
INPUT AIRING MODE B[n]
S38
INPUT TIME SIGNAL T[n]
S39
SHIFT CHARACTERISTIC VALUE BUFFER AND INPUT VALUE
S40

FIG.12

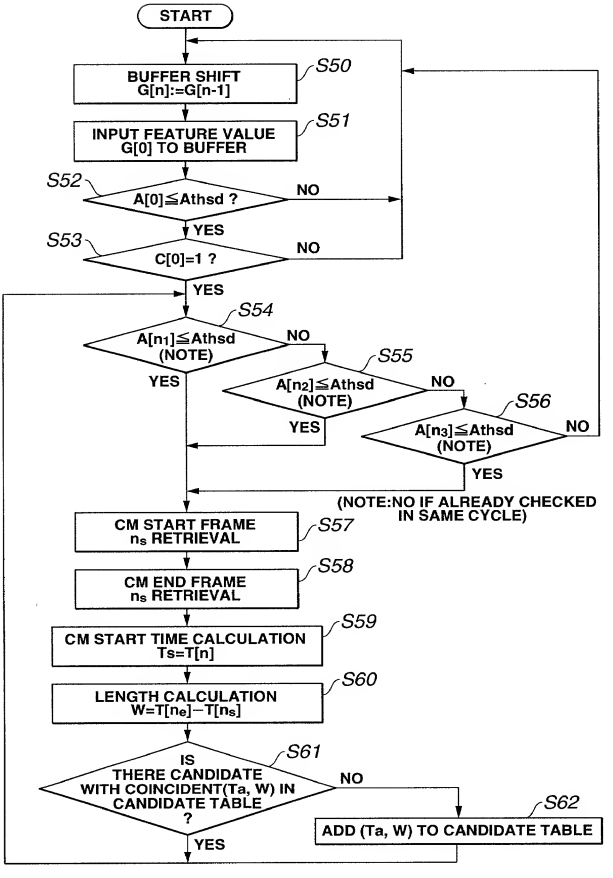

START
BUFFER SHIFT
G[n]:=G[n-1]
S50
INPUT FEATURE VALUE
G[0] TO BUFFER
S51
S52
A[0]≦Athsd ?
NO
YES
S53
C[0]=1 ?
NO
YES
S54
A[n1]≦Athsd
(NOTE)
NO
YES
S55
A[n2]≦Athsd
(NOTE)
NO
YES
S56
A[n3]≦Athsd
(NOTE)
NO
YES
(NOTE:NO IF ALREADY CHECKED
IN SAME CYCLE)
CM START FRAME
ns RETRIEVAL
S57
CM END FRAME
ns RETRIEVAL
S58
CM START TIME CALCULATION
Ts=T[n]
S59
LENGTH CALCULATION
W=T[ne]−T[ns]
S60
IS
THERE CANDIDATE
WITH COINCIDENT(Ta, W) IN
CANDIDATE TABLE
?
S61
NO
YES
ADD (Ta, W) TO CANDIDATE TABLE
S62

FIG.13

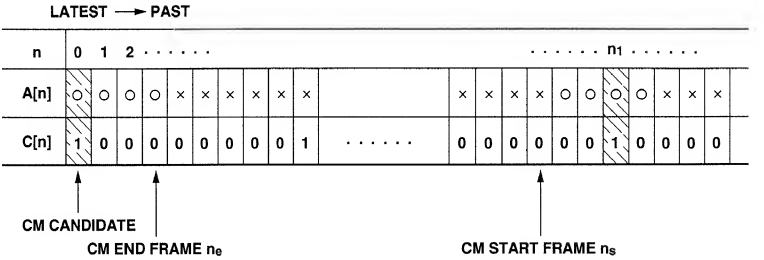


FIG.14

ITEM	SYMBOL	UNIT	EXAMPLE OF INDISPENSABLE CONDITION (19a)	EXAMPLE OF SUPPLEMENTARY CONDITIONS (20a)	EXAMPLE OF DECISION (21a)
START TIME	Ts	HOUR, MINUTES, SEC	1:23'45	1:23'45	1:23'45
LENGTH (SOUND LENGTH)	Tw	SEC	14.63	14.63	14.63
FORE BREAK LENGTH	Q_1	ms	-	300.0	300.0
BACK BREAK LENGTH	Q_2	ms	-	300.0	300.0
FORE BREAK MIN AMPLITUDE	Q_3	NOTE	-	0.00015	0.00015
BACK BREAK MIN AMPLITUDE	Q_4	NOTE	-	0.00020	0.00020
LEFT/RIGHT CORRELATION	Q_5	-	-	0.934	0.934
AVERAGE AMPLITUDE	Q_6	NOTE	-	0.010	0.010
NUMBER OF CUTS	Q_7	NUMBER	-	9	9
AIRING MODE	Q_8	-	-	1	1
NUMBER OF NEIGHBOURING CANDIDATES	Q_9	NUMBER	-	2	2
FORE SPECTRUM DIFFERENCE ENERGY	Q_{10}	-	-	0.41	0.41
BACK SPECTRUM DIFFERENCE ENERGY	Q_{11}	-	-	0.63	0.63
SCORE	R	-	-	-	1.80
SCORE DECISION RESULT	Z	-	-	-	1

NOTE : AMPLITUDE VALUE OF AUDIO SIGNAL IS INDICATED AS RATIO TO MAX AMPLITUDE

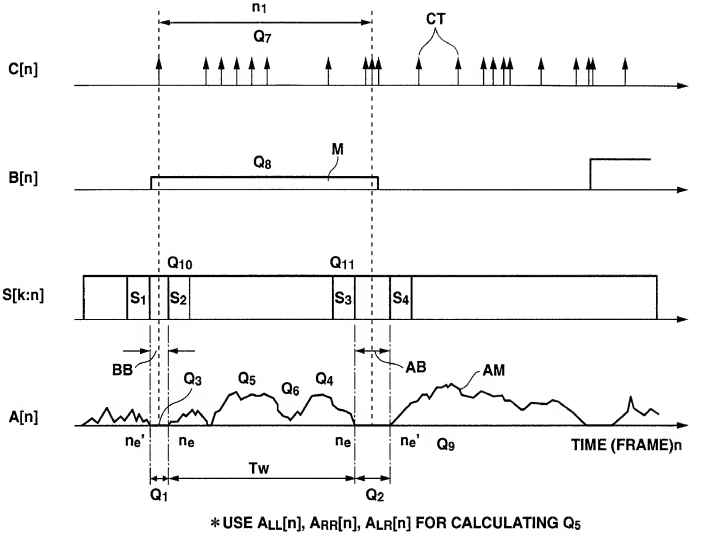
FIG.15

FIG.16A

FIG.16B

FIG.16C

FIG.16D



*USE $A_{LL}[n]$, $A_{RR}[n]$, $A_{LR}[n]$ FOR CALCULATING Q_5

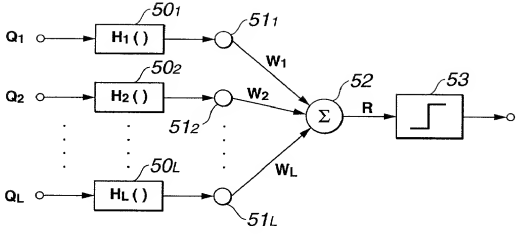


FIG.17

FIG.18A

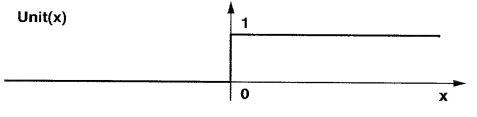


FIG.18B

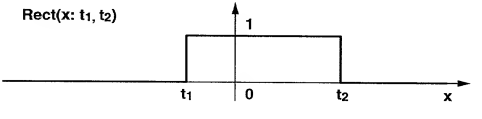
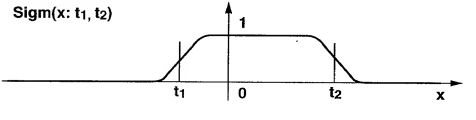


FIG.18C



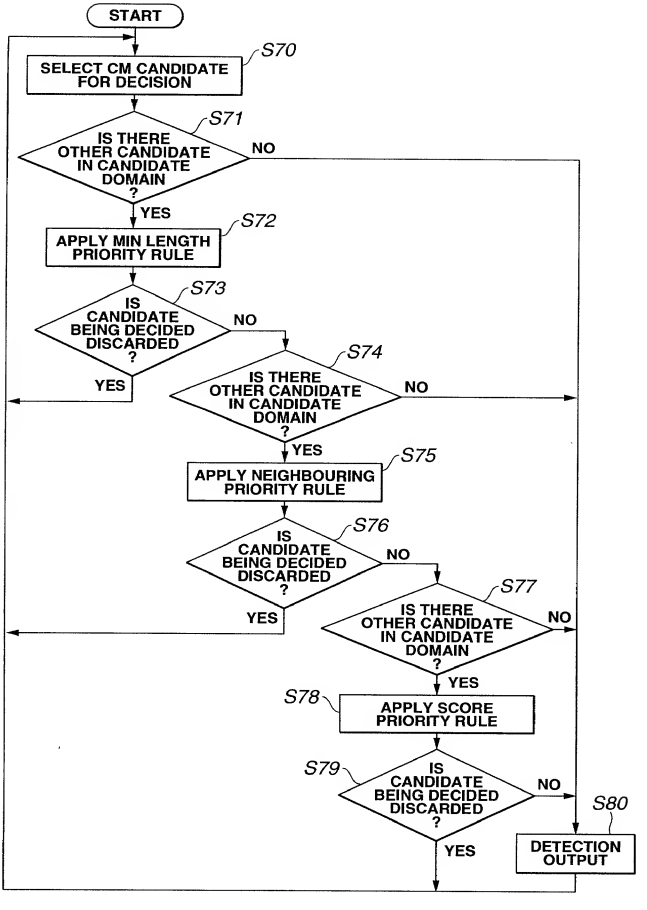

START
SELECT CM CANDIDATE FOR DECISION
S70
IS THERE OTHER CANDIDATE IN CANDIDATE DOMAIN ?
S71
NO
YES
APPLY MIN LENGTH PRIORITY RULE
S72
IS CANDIDATE BEING DECIDED DISCARDED ?
S73
NO
YES
IS THERE OTHER CANDIDATE IN CANDIDATE DOMAIN ?
S74
NO
YES
APPLY NEIGHBOURING PRIORITY RULE
S75
IS CANDIDATE BEING DECIDED DISCARDED ?
S76
NO
YES
IS THERE OTHER CANDIDATE IN CANDIDATE DOMAIN ?
S77
NO
YES
APPLY SCORE PRIORITY RULE
S78
IS CANDIDATE BEING DECIDED DISCARDED ?
S79
NO
YES
DETECTION OUTPUT
S80

FIG.19

FIG.20A

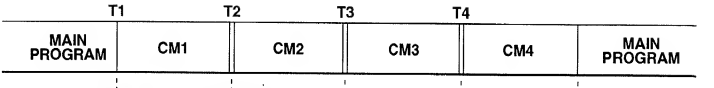


FIG.20B

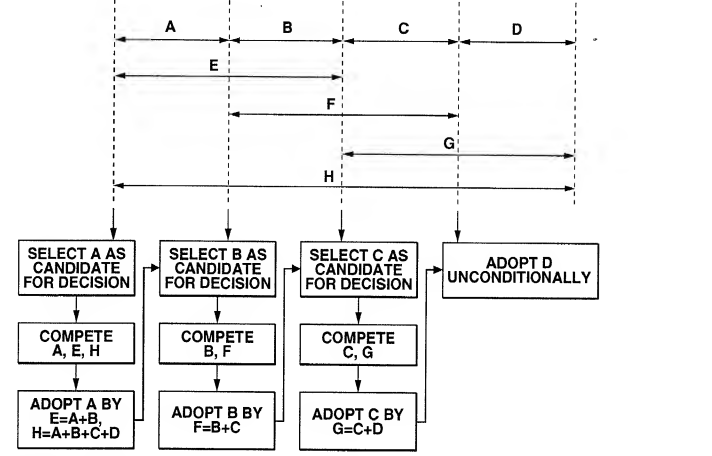


FIG.20C FIG.20D FIG.20E FIG.20F

FIG.21A

FIG.21B

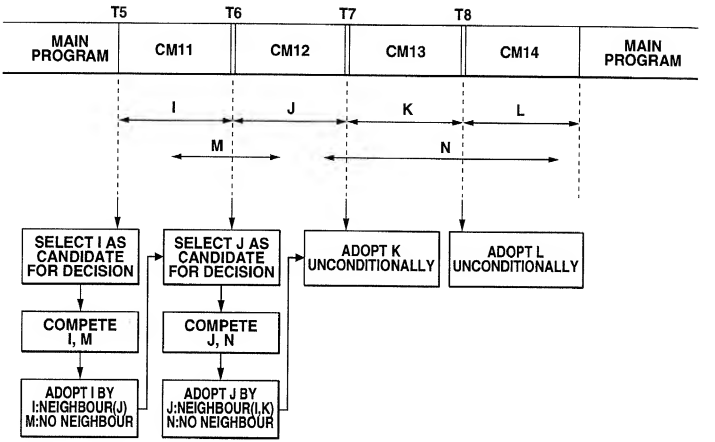


FIG.21C FIG.21D FIG.21E FIG.21F

FIG.22A

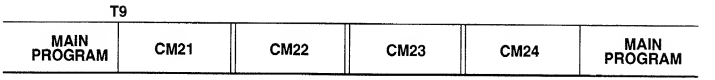
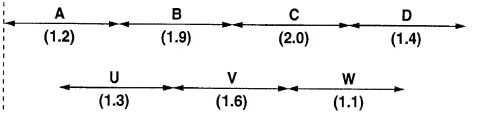


FIG.22B



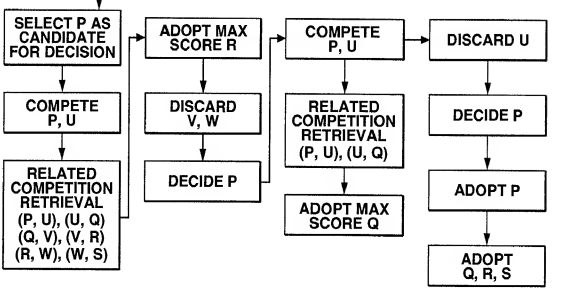


FIG.22C FIG.22D FIG.22E FIG.22F

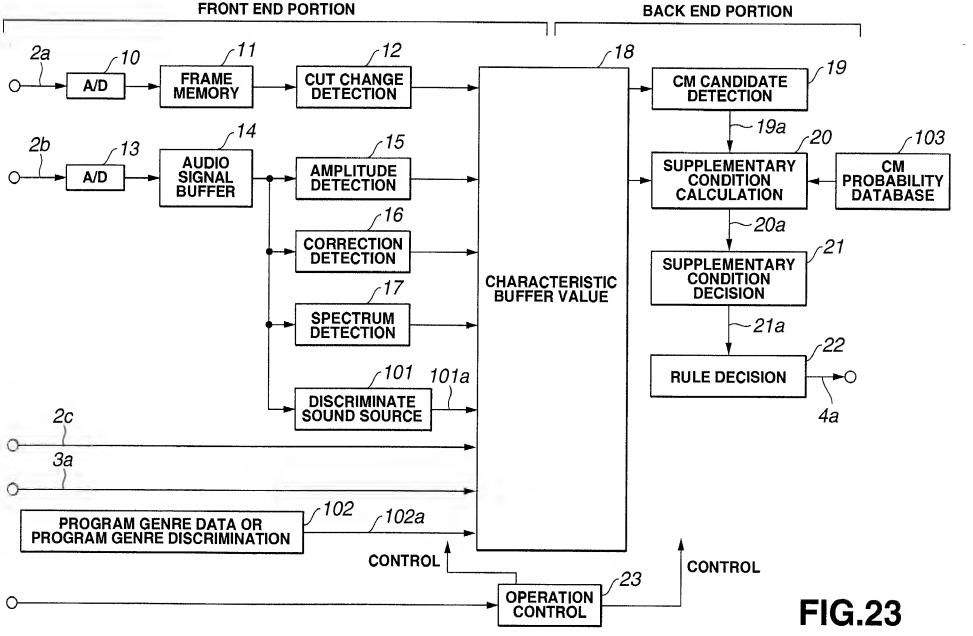


FIG.23

ITEM	SYMBOL	UNIT	EXAMPLE OF INDISPENSABLE CONDITION (19a)	EXAMPLE OF SUPPLEMENTARY CONDITIONS (20a)	EXAMPLE OF DECISION (21a)
POSSIBLE PRESENCE OF SPEECH	Q_{12}	-	-	1	1
POSSIBLE PRESENCE OF MUSIC	Q_{13}	-	-	1	1
TIME ZONE POSSIBILITY	Q_{14}	-	-	0.15	0.15
PROGRAM GENRE PROBABILITY	Q_{15}	-	-	0.1	0.1

FIG.24

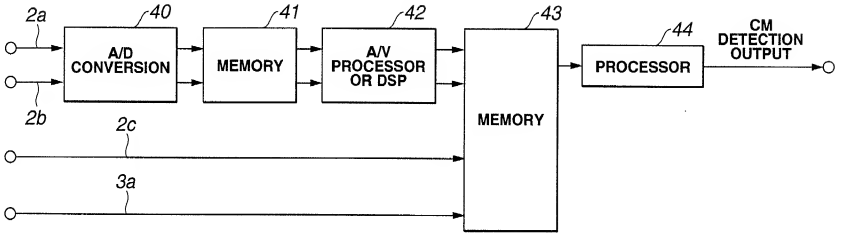


FIG.25

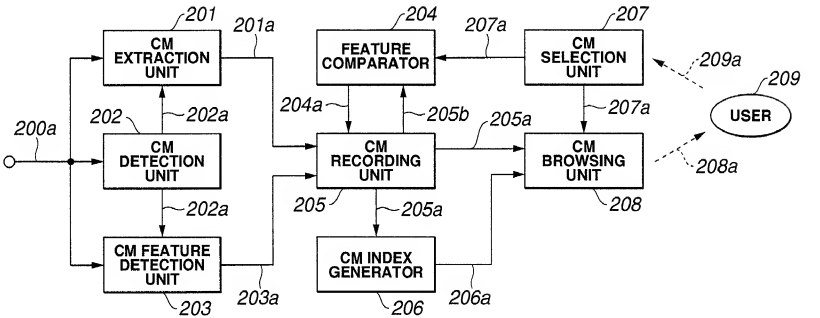


FIG.26

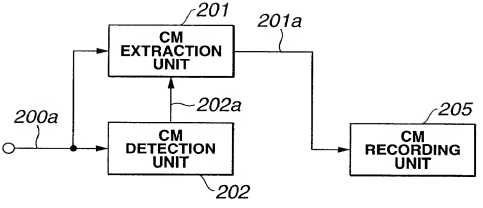

201
CM EXTRACTION UNIT
201a
202a
200a
CM DETECTION UNIT
202
205
CM RECORDING UNIT

FIG.27

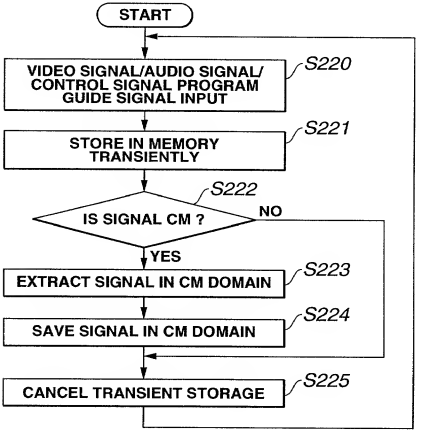

START
VIDEO SIGNAL/AUDIO SIGNAL/ CONTROL SIGNAL PROGRAM GUIDE SIGNAL INPUT
S220
STORE IN MEMORY TRANSIENTLY
S221
S222
IS SIGNAL CM ?
NO
YES
EXTRACT SIGNAL IN CM DOMAIN
S223
SAVE SIGNAL IN CM DOMAIN
S224
CANCEL TRANSIENT STORAGE
S225

FIG.28

FIG.29A

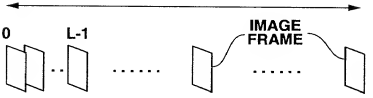


FIG.29B

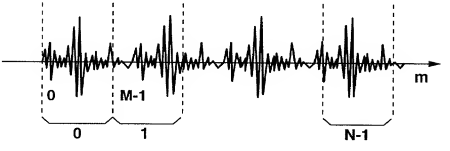


FIG.29C

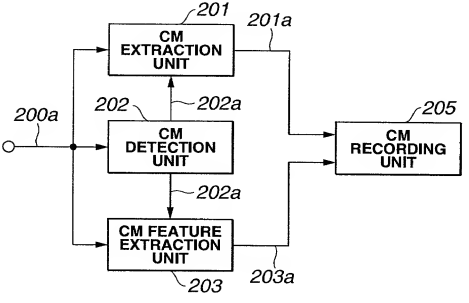


FIG.30

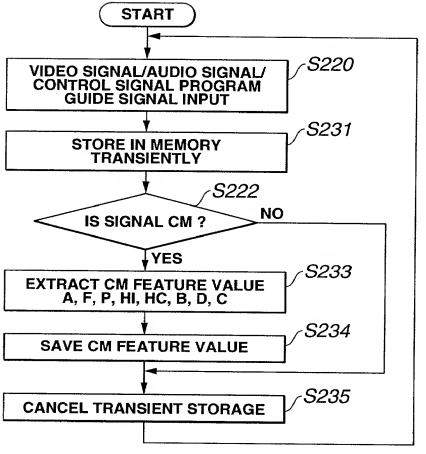

START
VIDEO SIGNAL/AUDIO SIGNAL/ CONTROL SIGNAL PROGRAM GUIDE SIGNAL INPUT
S220
STORE IN MEMORY TRANSIENTLY
S231
S222
IS SIGNAL CM ?
NO
YES
EXTRACT CM FEATURE VALUE A, F, P, HI, HC, B, D, C
S233
SAVE CM FEATURE VALUE
S234
CANCEL TRANSIENT STORAGE
S235

FIG.31

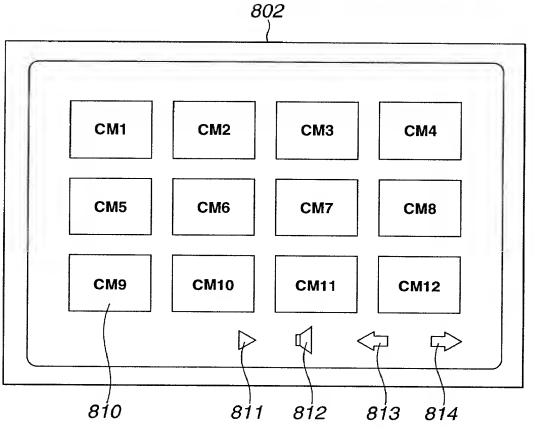

802
CM1
CM2
CM3
CM4
CM5
CM6
CM7
CM8
CM9
CM10
CM11
CM12
810
811
812
813
814

FIG.32

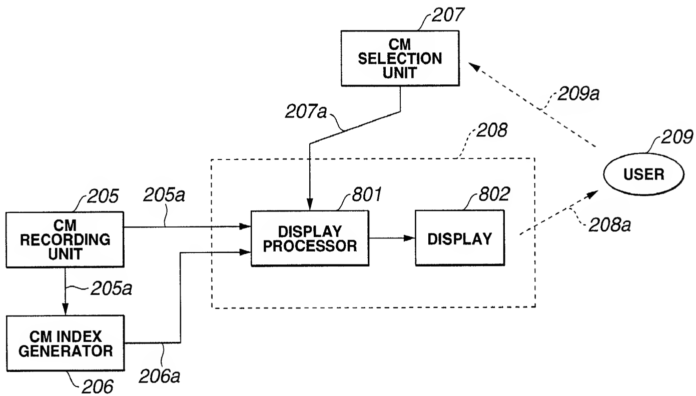

207
CM
SELECTION
UNIT
207a
209a
208
209
USER
205
205a
801
802
CM
RECORDING
UNIT
DISPLAY
PROCESSOR
DISPLAY
208a
205a
CM INDEX
GENERATOR
206a
206

FIG.33

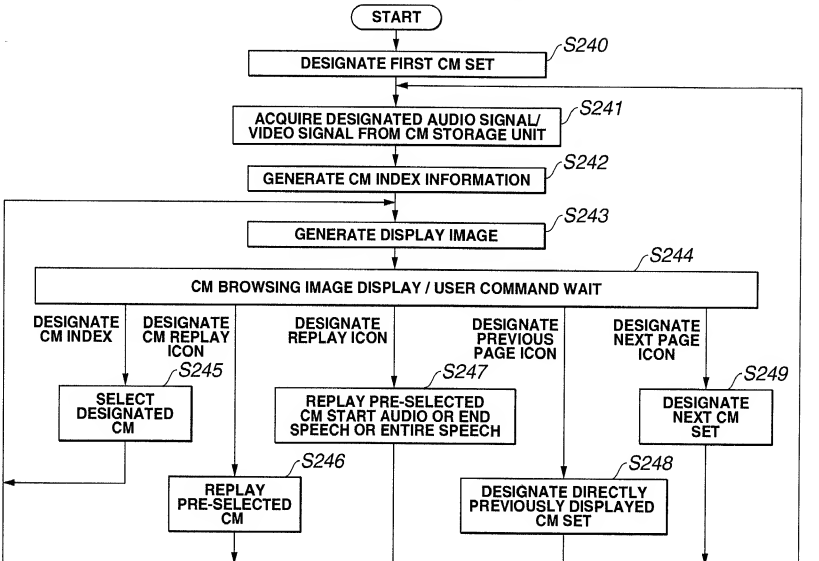


FIG.34

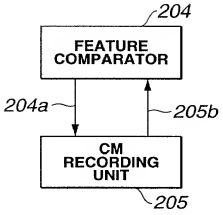

204
FEATURE COMPARATOR
204a
205b
CM RECORDING UNIT
205

FIG.35

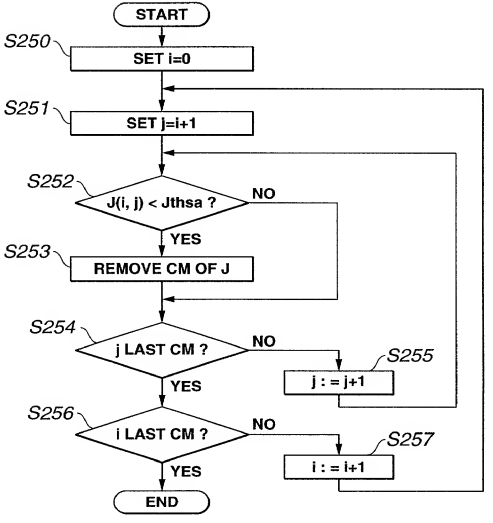

START
S250
SET i=0
S251
SET j=i+1
S252
J(i, j) < Jthsa ?
NO
YES
S253
REMOVE CM OF J
S254
j LAST CM ?
NO
S255
j : = j+1
YES
S256
i LAST CM ?
NO
S257
i : = i+1
YES
END

FIG.36

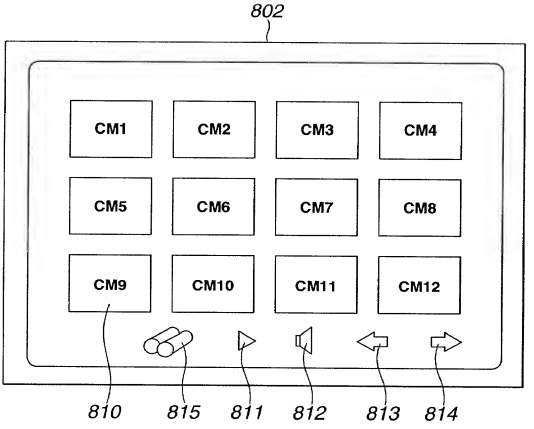

802
CM1
CM2
CM3
CM4
CM5
CM6
CM7
CM8
CM9
CM10
CM11
CM12
810
815
811
812
813
814

FIG.37

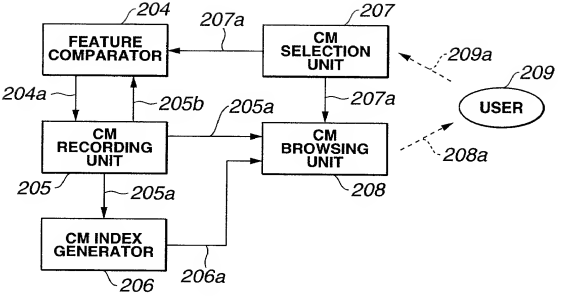

204
207a
207
FEATURE COMPARATOR
CM SELECTION UNIT
209a
209
USER
204a
205b
205a
207a
CM RECORDING UNIT
CM BROWSING UNIT
208a
205
205a
208
CM INDEX GENERATOR
206
206a

FIG.38

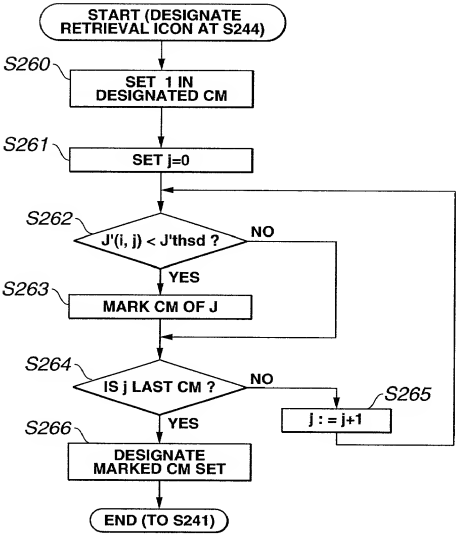

START (DESIGNATE RETRIEVAL ICON AT S244)
S260
SET 1 IN DESIGNATED CM
S261
SET j=0
S262
J'(i, j) < J'thsd ?
NO
YES
S263
MARK CM OF J
S264
IS j LAST CM ?
NO
S265
j : = j+1
YES
S266
DESIGNATE MARKED CM SET
END (TO S241)

FIG.39

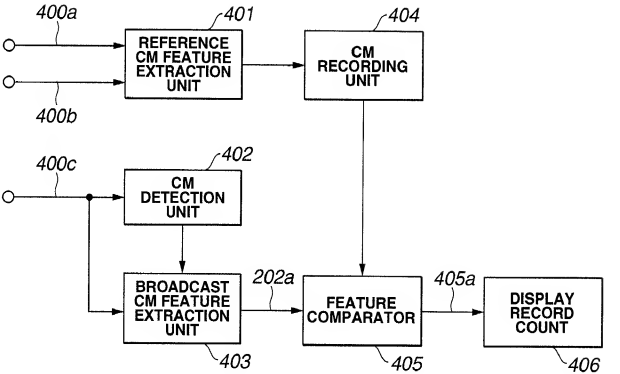


FIG.40

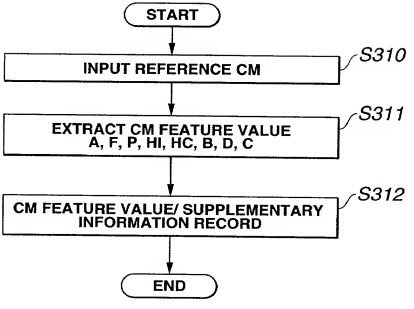

START
INPUT REFERENCE CM
S310
EXTRACT CM FEATURE VALUE
A, F, P, HI, HC, B, D, C
S311
CM FEATURE VALUE/ SUPPLEMENTARY
INFORMATION RECORD
S312
END

FIG.41

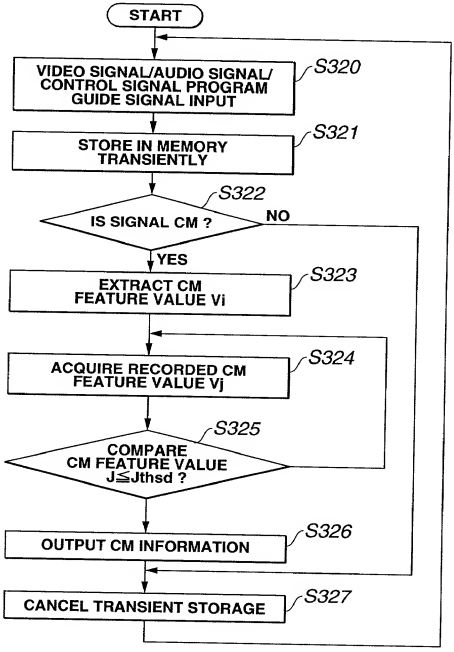

START
VIDEO SIGNAL/AUDIO SIGNAL/ CONTROL SIGNAL PROGRAM GUIDE SIGNAL INPUT
S320
STORE IN MEMORY TRANSIENTLY
S321
IS SIGNAL CM ?
S322
NO
YES
EXTRACT CM FEATURE VALUE Vi
S323
ACQUIRE RECORDED CM FEATURE VALUE Vj
S324
COMPARE CM FEATURE VALUE J≦Jthsd ?
S325
OUTPUT CM INFORMATION
S326
CANCEL TRANSIENT STORAGE
S327

FIG.42